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Towards reasonably priced microcredit: analysing Egyptian NGO-MFIs' cost structure and financial performance

AMR KHAFAGY

Interest rates have always been a much debated topic in microfinance, as the prices paid by low-income clients tend to be higher than conventional banks' rates. In Egypt, microcredit rates are increasingly being criticized and viewed as unreasonably high. The study analyses the effective interest rates charged by Egyptian NGO-MFIs compared with commercial banks' rates, and using time series cross-sectional regression models, the study examines the main determinants affecting NGO-MFIs' portfolio yield and operating expenses in order to identify prospects for providing reasonably priced credit for low-income Egyptians. Findings suggest that, as the average portfolio yield for NGO-MFIs in Egypt has exceeded the global average portfolio yield, there is a clear potential for providing microcredit at lower prices, and much can still be done towards more operational efficiency.

Keywords: microcredit, interest rates, Egypt, portfolio yield, operational efficiency

The most debated topic in microcredit has always been interest rates, as the prices paid by low-income clients tend to be higher than conventional banks' rates, and may exceed 100 per cent effective annual rates for some global MFIs. In Egypt, microcredit rates are increasingly being criticized on moral standards, and viewed as unreasonably high. At least once a year, you can find an article in an Egyptian newspaper urging for the creation of 'a bank for the poor'. Driven by religious perspectives and a long history of subsidized policies, the longing for 'a bank for the poor' in Egypt is always spinning around the idea of providing credit to low-income households 'without interest rates or collaterals'.

Interest should be seen as the price of an ordinary and important service, and the unpleasant news, which everyone already knows, is that there has never been, nor will be, sustainable cost-free lending, and yet the debate in Egypt continues. In their book, *Portfolios of the Poor*, Collins et al. (2009) explain that, 'interest rates may often be better understood as *fees* for a service than a *rate* for the use of money for a specific period'. Well, demands in Egypt for no-cost loans distract our attention from what should really be done: 'attention should be focused on how to reduce costs per client' (Mersland and Strom, 2010). Thus, the question of what determines

Amr Khafagy (amfkhafagy@gmail.com) is an analyst at MicroSave in Lucknow, Uttar Pradesh, India. He previously worked for SFD Egypt and holds a Master's degree in Management of Development from Turin School of Development.
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microcredit interest rates in Egypt becomes increasingly important. This study tries to analyse effective interest rates charged by microcredit providers in Egypt, key factors that determine these rates, and prospects to provide reasonably priced credit for low-income Egyptians.

Why do the poor pay more?

Setting the appropriate rate is not an easy decision. For MFIs to continually provide financial services for financially excluded populations they must impose sufficiently high interest rates to cover their high expenses. However, extremely high interest rates would increase the default risk by attracting high-risk clients (Waweru et al., 2011). Supporters of commercial microcredit claim that clients are more concerned with their ability to access finance rather than how much it costs them. Porteous (2006) explains that what really matters is the loan size, type of loan, and disbursement timing and procedures. This claim is usually supported by steady demand for microcredit regardless of the charged rates and the common presumption about high returns on capital for microenterprises.

Gobezie (2004) and Cull et al. (2007) estimate a high rate of return on invested capital for those with low capital and who are facing capital constraints. Therefore, poor households would still maintain sufficient revenues even if they are paying high interest rates. Goldstein and Udry (1999) and Bidwell (2009) found similar results for small-scale farmers. In contrast, many studies observed clear evidence for price elasticity of demand for credit among microcredit borrowers compared with wealthier borrowers (Dehejia et al., 2005; Karlan and Zinman, 2008; Annim, 2011).

Hashemi and Rosenberg (2006) explain that high microcredit rates are rational, associated with high risks, lack of guarantees, and the challenges of continually providing non-financial services. While, according to Morduch (2000), high rates are caused by high inelastic demand for credit among populations where financial services are limited. On the basis of cost per unit, creating and collecting tiny loans is extremely costly. It should not be surprising that institutions which claim to be serving low-income populations are imposing much higher prices than those profitable institutions targeting richer clients. The reason for that is the adminis-trative costs, which are clearly higher for tiny loans compared with other commercial banks' loans (Rosenberg et al., 2009).

According to Rosenberg et al. (2009, 2013), there are four main factors which determine MFIs' interest rates: cost of funds, loan loss expenses, operating expenses, and profits. Moreover, Rosenberg et al. (2013) have found that the average global nominal interest yield for microcredit providers has dropped by 2.7 per cent, to around 27 per cent in 2011, compared with around 30 per cent in 2004, taking into consideration that global nominal interest yield has not recorded any significant decrease during the period from 2007 to 2011. Such a drop in the average global interest yield was associated with the decline of MFIs' operating expenses and net operating profits. While on the other hand, the global market witnessed an increase in both cost of funds and loan loss expenses for the same period. The study showed

that the nominal interest yield for the MENA (Middle East and North Africa) region has slightly declined from 30 per cent in 2004 to around 26 per cent, taking into account that the MENA market has experienced the same global trend of increasing interest rates during the period from 2007 to 2011.

Interest rate ceilings

A need for legal regulations to protect the poor from MFIs' abuse was recommended by many observers, as poor people who might be illiterate and have no shield from profit-seeking MFIs should be protected. The main aim of interest rate ceilings is client protection against exploitation of low-income households who are more exposed to excessively high rates for credit. These ceilings often include both consumer and business borrowers in the scope of their protection. But whether an interest rate ceiling is the ideal resolution or not is disputed. Paul (2010) argued that usury laws address the end symptom and not the root of the problem, as regulations have rarely focused on the main driver for high microcredit interest rates which is operating costs. Others suggest that interest rate ceilings are in fact harming those who are supposed to be protected by such laws – the borrowers – as usury laws drive financial institutions to exclude clients with the highest credit risk (Jansson and Wenner, 1997). Also, rate ceilings may encourage MFIs to impose hidden fees; this decreases their transparency and most customers do not realize that these fees are part of the loan cost (Helms and Reille, 2004; Policis, 2004; Paul, 2010; Campion et al., 2010).

In addition, interest rate ceilings may push many MFIs out of the market since they are struggling to cover the costs of their operations. Furthermore, many studies have claimed that the growth of the microfinance industry is stifled by interest rate ceilings, as MFIs tend to shift their focus from lending to the poorer clientele in remote areas to a more urban clientele that is less costly to cover, and through increasing their average loan size (Helms and Reille, 2004; Acclassato, 2006; King, 2008; Payne and Skinner, 2010). Also, constraints on microloan prices harm MFIs' financial sustainability (Wright and Alamgir, 2004; Jenkins, 2006; Waweru et al., 2011).

Nevertheless Wright and Alamgir (2004) claim that if a reasonable interest cap was enforced, MFIs would be encouraged towards improving their operating expenses. Reasonable or even variable ceilings on interest rates, which should not be extremely and unrealistically low, could be quite effective, especially in undeveloped markets where little competition is found.

Microcredit industry in Egypt

Egypt is the largest market in the MENA region in terms of outreach, and the second after Morocco in terms of total outstanding portfolio. The number of active clients has steadily increased over the period from 2005 to 2009, with a five year average growth rate of 28.44 per cent, and more than 46 per cent growth rate in 2007 (Sanabel, 2010). According to the Egyptian Financial Supervisory Authority (EFSA, 2010), by

the end of 2009, more than 400 institutions were providing microcredit services to a total of 1.4 million active borrowers, 50 per cent of whom are women. Moreover, 49 per cent of active borrowers were found in Upper Egypt, followed by the Lower Egypt region with 36 per cent. EFSA estimates the total outstanding portfolio of Egyptian microcredit institutions to exceed EGP2.2 bn (US$319 m).

Non-governmental organizations (NGOs) and community development associa-tions (CDAs) are the main microcredit providers, accounting for 83 per cent of the total number of active borrowers and 68 per cent of total outstanding portfolio by the end of 2009. However, there is no legal definition or any regulatory framework for microfinance services in Egypt, though a draft microfinance law was prepared by EFSA in 2010 and is still waiting for legislators' approval. The proposed legislation addresses microfinance providers as only-for-profit firms/institutions. Under this draft law, the Egyptian Financial Supervisory Authority will be the responsible regulator and supervisor of MFIs, and it is not clear whether the new legislation will allow other entities to continue providing microfinance services or not.

Most current microcredit products apply short repayment periods without any grace period. Accordingly, 71 per cent of the current served clients are operating in the trade sector, followed by the service sector with 20 per cent. Moreover, two main lending methods are adopted by MFIs in Egypt, individual and solidarity group lending methods. Solidarity group lending applies weekly repayments with an annual interest rate ranging from 24 per cent to 28 per cent, while individual lending, usually provided to finance micro-entrepreneurs' working capital, applies monthly repayments and an annual interest rate ranging from 13.5 per cent to 16 per cent.

On the demand side, it is relatively difficult to predict the actual demand for microcredit services in Egypt; however, it is noticeable that the level of outreach is still low. Many Egyptian villages lack access to any formal financial services or are served by monopolistic NGO-MFIs.

Despite the present unclear political and economic conditions, a platform has recently been developed by the Egyptian Micro-Finance Network (EMFN), integrating NGOs into the I-SCORE credit bureau system. Upon the success of the platform, the data of more than 70 per cent of Egypt's microcredit borrowers will be included in the I-SCORE, and EMFN's members will be allowed to investigate their potential clients at a reasonable price. The potential accessibility to a credit bureau will open the gate for more operational efficiency.

Microcredit vs. commercial banks' interest rates

In an economy characterized by a relatively high year-to-year inflation rate, the path for obtaining low prices for microloans is not straightforward. Like many developing economies, the five year average consumer price index (CPI) for 2007 to 2011 was 12.2 per cent, and 9.75 per cent by the end of June 2012. Based on the Egyptian Central Bank's (CBE) overnight deposit rate, the average interest rate during 1991 to 2013 is 11.67 per cent, reaching its peak of 21.40 per cent in October 1991 and the lowest rate of 8.25 per cent in September 2009. Treasury bills were issued with 17 per

cent rate of return during 2012, while CBE's discount rate recorded an average of 9.2 per cent during the last five years; by the end of 2012, the yearly weighted average interest rate for commercial banks was 12.2 per cent. Clearly, high interest rates are not only a microcredit phenomenon in the Egyptian economy; in fact, microcredit rates are close to those charged on credit cards and consumer loans, which in many cases can exceed 2 per cent per month (Rosenberg et al., 2009).

In this study, five year financial statements for six major commercial banks were compared with the largest eight NGO-MFIs operating in Egypt, representing the period from 2007 to 2011, in order to study profitability and portfolio yield of the Egyptian microfinance sector compared with the commercial banking sector. NGO-MFIs' portfolio yield was measured as the total financial income from loans weighted by the average gross outstanding loan portfolio, while commercial banks' yield was calculated as only the interest income from consumer loans weighted by the average net outstanding loan portfolio for consumers (excluding treasury bills outstanding portfolio and its returns). This can paint a picture of the real prices paid by low-income clients compared with upper and middle class lending prices. Unsurprisingly, results reported unpleasant news for low-income clients, with a huge disparity in the average portfolio yield of commercial banks for five years, which recorded 13.92 per cent, compared with 31.48 per cent recorded by NGO-MFIs for the same period (see Figure 1).

Similar to Rosenberg et al.'s (2013) findings, Figure 2 shows that Egyptian NGO-MFIs' average return on assets is somewhat higher than commercial banks, though the average return on equity is much less than commercial banks. The five year average return on assets was 5.22 per cent for the examined NGO-MFIs compared with only 1.48 per cent for commercial banks, while in contrast, commercial banks' average return on equity was 17.6 per cent compared with 7.14 per cent for NGO-MFIs.

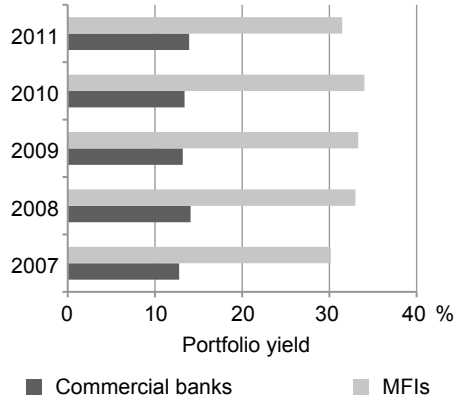

Figure 1 NGO-MFIs' vs. commercial banks' portfolio yield

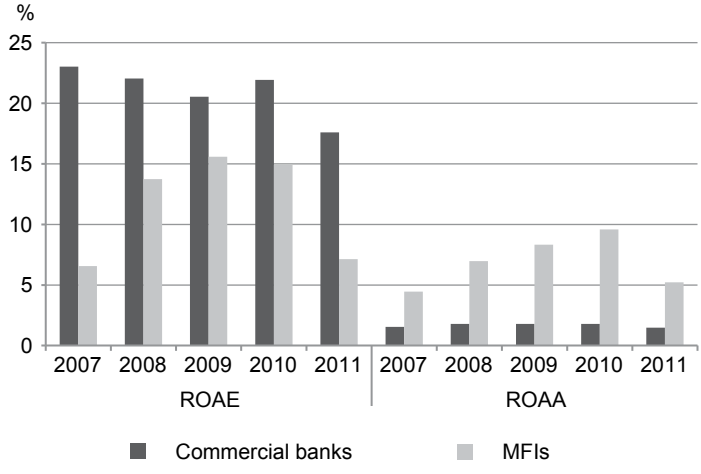

Figure 2 NGO-MFIs' vs. commercial banks' return on average total assets (ROAA) and return on average total equity (ROAE)

Research design and methodology

Research objective

The main purpose of the study is to analyse effective interest rates charged by microcredit providers in Egypt, and the key factors that drive these rates. For large institutions, the research here will examine a number of the main drivers of microfi-nance interest rates mentioned in the literature review; namely, operational efficiency (in terms of personnel and administrative expenses), portfolio quality, NGO-MFIs' age in years, profit margin, average loan size, scale of the institution (in terms of total number of active borrowers), percentage of total borrowers who are women, and the cost of funds. While for NGO-MFIs funded from the Social Fund for Development, the study will only examine the operational efficiency, portfolio quality, profit margin, average loan size, total number of active borrowers, and the cost of funds. Furthermore, the study hopes to develop recommendations for discussions and policy dialogue, to assist in strengthening and developing better policies and initiatives for the microfinance industry in Egypt.

Research questions

The study addresses the following main questions with respect to microcredit interest rates in Egypt:

- What are the main determinants of microcredit interest rates in Egypt?
- Do low-income Egyptian households pay a reasonable price for credit?
- What are the prospects to provide reasonably-priced credit for low-income Egyptians?

The sample

In the attempt to study the effective interest rates charged by Egyptian microcredit providers, the research used primary data to analyse the financial and operational performance of 42 NGO-MFIs operating in the Egyptian market. The data of 11 NGO-MFIs were collected from the Microfinance Information Exchange, MIX Market; as few Egyptian NGO-MFIs regularly report data to the MIX market, data for the other 31 NGO-MFIs were collected from available audited financial statements submitted to the Social Fund for Development, Egypt (SFD).

As shown in Table 1, NGO-MFIs in the sample were divided into two tiers based on their operational size and their gross loan portfolio. First tier NGO-MFIs in the study hold more than 60 per cent of the total amount of microcredit portfolio in Egypt, in terms of outreach and outstanding portfolio. The five year average loan portfolio of a first tier NGO-MFI is more than EGP15 m ($2 m) and the average number of active borrowers is above 7,000 clients. Data for first tier NGO-MFIs cover the period from 2007 to 2011, while as the SFD's funding requirement is the submission of only three years' financial statements, data for second tier NGO-MFIs cover only the period from 2009 to 2011.

The selection of second tier NGO-MFIs included in the study was based on data availability and quality of the financial statements. Moreover, SFD's monitoring and evaluation reports were used to assume NGO-MFIs' 'average loan size' and 'number of active borrowers'.

Table 1 Sample description

	First tier	*Second tier*	*Total*
Average gross loan portfolio (in EGP '000s)	> 15,000	<15,000	–
Average no. of active borrowers	> 7,000	< 7,000	–
Years in observation	2007–2011	2009–2011	–
No. of NGO-MFIs	13	29	42
No. of observations	65	87	152

By the end of 2009, the total gross loan portfolio for microcredit in Egypt was around EGP2.06 bn ($375.06 m), according to Sanabel's 2009 Industry Survey, and EGP2.18 bn ($397.82 m), according to the 2010 Egyptian Financial Supervisory Authority report. Table 2 shows that, with a market outreach of 1.4 billion or 1.5 billion according to Sanabel and EFSA, respectively, the NGO-MFIs included in our study represent more than 60 per cent of the total gross loan portfolio and more than 75 per cent of total active borrowers of Egypt's microcredit market, as of year-end 2009.

Table 2 Sample size vs. total market outreach

	Sanabel	*EFSA*	*First tier*	*Second tier*
GLP (in EGP)	2,055,218,637	2,179,951,794	1,287,875,829	59,366,482
Total active borrowers	1,424,860	1,502,507	1,126,349	NA

Research design

The study compared the actual portfolio yield of the examined NGO-MFIs and the effective interest rates which should be applied according to the 'Pricing Formula' suggested by CGAP (2002) as the best pricing practice for microfinance institutions. According to CGAP (2002), the annualized effective interest rate (R) charged on loans will be a function of five elements, each expressed as a percentage of average outstanding loan portfolio, as follows: administrative expenses (AE), loan losses (LL), the cost of funds (CF), the desired capitalization rate (K), and investment income (II):

$$R = \frac{AE + LL + CF + K - II}{1 - LL}$$

Finally, the drivers of interest rates were analysed using two different time series cross-sectional regression models (TSCS), in order to examine the main factors affecting the portfolio yield and the operating expenses. The models, as suggested by Campion et al. (2010), were proposed to examine the research's main questions. In the first model, the portfolio yield is the dependent variable while independent variables will be as follows: personnel expense ratio (personnel expenses weighted by average gross loan portfolio), administration costs weighted by average gross loan portfolio, profit margin, cost of funds, average loan size, total number of active borrowers, impairment loss allowance weighted by average gross loan portfolio, percentage of total borrowers who are women, and NGO-MFI's age in years.

$$\begin{aligned}\text{Portfolio yield}_t &= \beta_0 + \beta_1\,(\text{personal expense ratio})_t + \beta_2\,(\text{administrative costs ration})_t \\ &+ \beta_3\,(\text{profit margin})_t + \beta_4\,(\text{cost of funds})_t + \beta_5\,(\text{average loan size})_t \\ &+ \beta_6\,(\text{no. of borrowers})_t + \beta_7\,(\text{impairment loss allowance})_t \\ &+ \beta_8\,(\text{female clients})_t + \beta_9\,(\text{age})_t + \in\end{aligned}$$

In the second model, the operating expense ratio is the dependent variable, while independent variables will be as follows: administrative costs ratio, OSS (financial revenue/(financial expense + loan loss provision expense + operating expense)), profit margin, average loan size, total number of active borrowers, impairment loss allowance weighted by average gross loan portfolio, percentage of total borrowers who are women, and NGO-MFI's age in years.

$$\begin{aligned}\text{Operating expense ratio}_t &= \beta_0 + \beta_1\,(\text{administrative costs ratio})_t + \beta_2\,(\text{OSS})_t + \beta_3\,(\text{profit margin})_t \\ &+ \beta_4\,(\text{average loan size})_t + \beta_5\,(\text{No. of borrowers})_t \\ &+ \beta_6\,(\text{impairment loss allowance})_t + \beta_7\,(\text{female clients})_t + \beta_8\,(\text{age})_t + \in\end{aligned}$$

As for second tier NGO-MFIs, the drivers of interest rates shall be analysed using the same regression models excluding impairment loss allowance, percentage of total borrowers who are women, and NGO-MFI's age in years, due to data availability. As one of the main assumptions that the ordinary least squares (OLS) model relies on is that all errors across units and time periods are homogeneous, having the same variance, and are independent of each other, accordingly, OLS would not be a good

predictor for a time series cross-sectional analysis. Moreover, the presence of autocorrelation disturbs the (OLS) assumption that the error terms are uncorrelated, which can lead to statistically biased or inefficient estimations. On the other hand, multicol-linearity remains unsolved in GLS (generalized least squares) estimation. For these reasons, the above-mentioned equations are estimated using feasible generalized least squares (FGLS) estimation. FGLS allows estimation in the presence of autocorrelation within panels and heteroskedastic error structures across panels (Podestà, 2002).

Study limitations

Two main limitations in the research were recognized. The first limitation was the quality of financial data collected, as several financial statements in the study presented clear lack of transparency in financial reporting, especially for small and medium scale NGO-MFIs. In this respect, *The Economist*'s Global Microscope index for 2012 (Economist Intelligence Unit, 2012) lowered Egypt's year-to-year ranking from 42nd to 50th due to the decline in both accounting and pricing transparencies. *The Economist*'s index reported that, as there is no legal commitment for NGO-MFIs to publicly reveal their interest rates or fees, most NGO-MFIs are not transparent in informing clients of the full cost of their loans. In the study, few financial statements were in compliance with microfinance international accounting principles, and NGO-MFIs who follow the industry's standards are doing so voluntarily. Secondly, portfolio yield is used in the study as a measurement for an MFI's average effective interest rate. Portfolio yield includes interest and fees received by an MFI on a portfolio weighted by its two year average gross portfolio. Although the portfolio yield gives a clear picture of an MFI's earnings from loans, it does not fairly show what microcredit borrowers are really paying. Many Egyptian MFIs impose compulsory savings on their clients, in which they do not disburse the full amount of loan to their borrowers while maintaining a percentage of the loan as a deposit, though interest rates charged on borrowers are still calculated on the full loan amount. Such practices raise the effective interest rates, as compulsory savings cut the net loan disbursed, which the borrower actually receives, making the actual amount of interest paid by a borrower exceed the rate declared by an MFI. According to Rosenberg et al. (2013), around a third of total microcredit borrowers worldwide in 2011 were served by MFIs that impose compulsory savings.

Another limitation on interest yield is that it measures the financial returns of an MFI weighted by its entire gross portfolio, while in fact an MFI's total gross portfolio might include several types of credit products, which might vary in their terms and prices. Also, the total gross loan portfolio includes, besides active loans, loans which are delinquent and have neither been repaid nor written off. A better measurement for the true price paid by microcredit borrowers is the annual percentage rate (APR) on a borrower's particular loan. APR is usually higher than the stated interest rate, as it considers the loan's total sum of cash flows and their timing, including interest, principal, and any other fees or charges, including compulsory deposits. Maintaining these data is certainly difficult in the present time, which restricts the use of APR as a proxy for microcredit price. The gathering of these data is labour-intensive and

relies heavily on the voluntary cooperation of MFIs to share the fees and charges which they actually impose on every loan product (Rosenberg et al., 2013).

Results and interpretations

NGO-MFIs' portfolio yield and cost structure

Rosenberg et al. (2013) show a drop in the global average interest yield for the period from 2004 to 2007, but not afterward, reaching a global average of 27 per cent, and 26 per cent for the MENA region in 2011. In contrast, Figure 3 shows a clear uptrend for Egyptian NGO-MFIs' portfolio yield, especially in the last three years. By the end of 2011, average portfolio yield for first tier NGO-MFIs had reached 33.2 per cent compared with an average portfolio yield of 25.3 per cent in 2006, while average portfolio yield for the second tier NGO-MFIs in our sample increased by only 1 per cent during the period from 2009 to 2011, reaching 23.6 per cent in 2011 compared with 22.6 per cent in 2009.

Such an increase in the average portfolio yield was derived by the increase in operating expenses (personnel expenses and administrative costs). As Figure 4 displays, except for profit margin and cost of funds, all other effective factors have recorded noticeable increases especially during 2011. While Rosenberg et al. (2009) suggest that average loan losses as a percentage of gross loan portfolio has a fairly low effect on MFIs' cost structure compared with other factors, first tier NGO-MFIs' findings indicate that the most obvious increase which occurred was in the rate of provision for loan loss expenses, which increased suddenly during 2011, reaching an average of 3.1 per cent for first tier MFIs, compared with less than 1 per cent in the preceding four years. The robust increase in the rate of provision for loan loss expenses is compatible with results reported by both Sanabel and MIX Market in the '2011 Middle East and North Africa Regional Snapshot' released in 2012. Sanabel and MIX Market (2012) found that portfolio at risk (PAR) for some MFIs in Egypt floated around 20 per cent, suggesting that a high level of PAR during 2011 is a direct result of the political and social instability formed after the uprising at the beginning of the year.

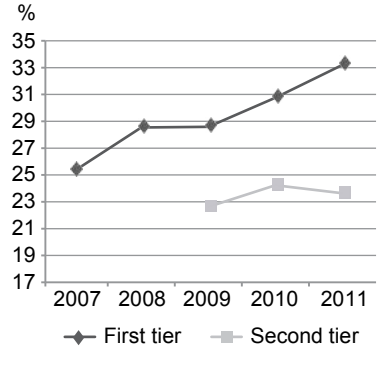

Figure 3 NGO-MFIs' average portfolio yield

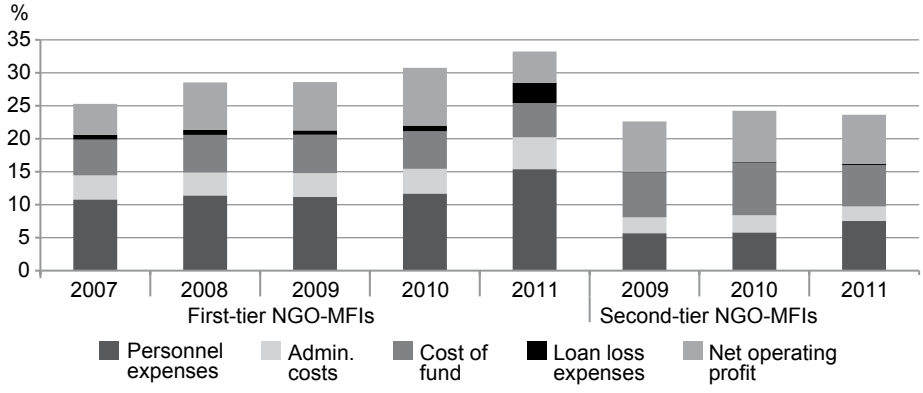

Figure 4 NGO-MFIs' costs and profits as a percentage of gross loan portfolio

On the other hand, for second tier MFIs analysis, only 3 out of the 29 NGO-MFIs examined were creating loan loss reserves in their financial statements, and accordingly, portfolio quality of second tier NGO-MFIs is not captured in this research. Figure 4 indicates that profit margin inhabits the greater portion in second tier NGO-MFIs' portfolio yield for the years from 2009 to 2011, with an average of 7.6 per cent, followed by cost of funds with a three-year average of 7 per cent and personnel expense ratio with 6.3 per cent. Surprisingly, our results show that large NGO-MFIs are less cost effective, as there is a significant disparity in personnel expense ratio reaching around 15 per cent for first tier NGO-MFIs' compared with only 7.5 per cent for the second tier in 2011. Such high personnel expenses recorded by first tier NGO-MFIs support claims that even though microcredit providers are not-for-profit institutions, many large NGO-MFIs set high salaries for the board and top management compared with small NGO-MFIs. To identify the viability of insti-tutions' applied interest rates, we used the CGAP suggested Pricing Formula:

$$R = \frac{AE + LL + CF + K - II}{1 - LL}$$

In the basic pricing calculations, the yearly discount rate reported by the Central Bank of Egypt (CBE) is used as the desired capitalization rate, assuming that the minimum required rate of return should at least meet with the annual discount rate, in order to avoid de-capitalization of the business. In Figure 5, throughout the period from 2006 to 2011, the average portfolio yield for first tier MFIs lay below our suggested effective interest rate. Moreover, by 2011, average portfolio yield was nearly equal to the suggested effective interest rate with zero required rate of return. Figure 5 shows that regarding all debates about the acceptable level of interest rates, first tier MFIs were unable to impose sufficient prices to cover their expenses in addition to the inflation rate. Meaning, that however high growth rates had been recorded by Egyptian MFIs, most of them are facing gradual de-capitalization caused by high inflation rates experienced by the whole economy. Fernando (2006)

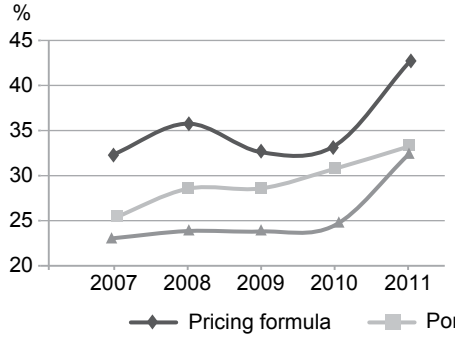

Figure 5 First tier: effective interest rate vs. portfolio yield

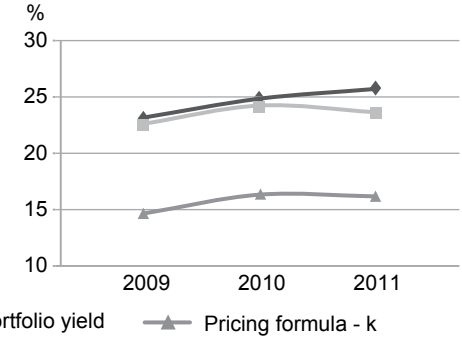

Figure 6 Second tier: effective interest rate vs. portfolio yield

highlights the effect of inflation on interest rates, arguing that high inflation rates reduce the real value of equity, and may push MFIs to increase their interests to avoid de-capitalization.

Figure 6 shows the results from the basic pricing calculations for the second tier NGO-MFIs, indicating that applied interest rates in 2009, 2010 and 2011 for second tier NGO-MFIs were adequate to recover all their expenses, with enough profits to cover inflation effects.

Table 3 Results of regressions explaining portfolio yield

	Multiple regressions		*Simple regressions*	
	Estimated coefficient			
Independent variable	First tier	Second tier	First tier	Second tier
OER	–	–	0.325***	0.867***
Personnel	1.114***	0.826***	0.430**	0.982***
Administrative costs	1.258***	1.098***	0.608**	0.633***
Profit margin	0.323***	0.063***	0.075***	0.062***
Cost of fund	0.562***	0.832***	0.383***	0.700***
Avg. loan size	0.000	0.000	–0.000***	0.000
No. of active borrowers	0.000***	0.000	0.000***	0.000***
Impairment loss allowance	0.165*	–	–0.499***	–
Women active borrowers	0.050***	–	0.072*	–
MFI's age	–0.001***	–	–0.001***	–
Observations	65	87	65	87

Note: The dependent variable is portfolio yield. Asterisks indicate statistical significance at the *10%, **5%, and ***1% level; no asterisk means the coefficient is not statistically significantly different from zero.

Regression analyses

Generally, key findings from the regression analyses shown in Tables 3 and 4 highlight the robust role of operation expense, cost of fund, profit margin, and impairment loan loss allowance in shaping NGO-MFIs' portfolio yield. High, statis-tically significant, positive correlation coefficients were found for these variables compared with very low or no statistically significant correlation with percentage of active female clients, average loan size, economies of scale, and age of NGO-MFI. As a labour-intensive industry, personnel expenses remain a leading determinant for portfolio yield and operating expenses, though, regression results suggest that administrative costs are found to have the highest positive correlation coefficients with both portfolio yield and operating expense ratio, compared with all other variables used, especially for first tier NGO-MFIs. For every 1 per cent increase in the administrative costs, portfolio yield is expected to increase by 1.26 per cent and 1.1 per cent, and OER would increase by 1.85 per cent and 1.36 per cent, for first and second tier NGO-MFIs, respectively. Administrative costs are mainly rent expenses, utilities, transport costs, and monitoring expenses, which impose huge pressure on NGO-MFIs' operational effectiveness. According to Sanabel (2010), Egypt maintained the lowest administrative cost in the MENA region for 2009, with an average of 2 per cent. As a labour-intensive industry, high personnel expenses impose a significant burden on MFIs' operations; findings suggest a strongly significant positive relation between personnel expense and portfolio yield, for both first and second tier NGO-MFIs. It is worth mentioning that Sanabel (2010) found that, with an average

Table 4 Results of regressions explaining operating expense ratio

	Multiple regressions		Simple regressions	
	Estimated coefficient			
Independent variable	First tier	Second tier	First tier	Second tier
Personnel	–	–	1.294***	1.119***
Administrative costs	1.845***	1.360***	1.890***	1.103***
OSS	–0.047***	–0.012***	–0.054***	–0.009**
Profit margin	0.062**	0.009**	–0.139***	0.004*
Avg. loan size	0.000	–0.000	–0.000	0.000*
No. of active borrowers	0.000	0.000***	0.000***	0.000
Impairment loss allowance	0.393***	–	0.420***	–
Women active borrowers	0.037*	–	0.091**	–
MFI's age	0.001**	–	–0.000	–
Observations	65	87	65	87

Note: The dependent variable is operating expense ratio. Asterisks indicate statistical significance at the *10 per cent, **5 per cent, and ***1 per cent level; no asterisk means the coefficient is not statistically significantly different from zero

of 268 clients per loan officer, Egypt maintained the second highest level of produc-tivity in the MENA region in 2009.

Moreover, results suggest a strong, significant, positive correlation between cost of funds and portfolio yield, especially for second tier NGO-MFIs. Findings suggest that with every 1 per cent increase in cost of fund, an increment of 0.56 per cent and 0.83 per cent in portfolio yield would probably occur for first and second tier NGO-MFIs, respectively.

General mainstream opinion agrees that MFIs should attempt to at least break even; however, arguments would vary on the acceptable level of profit (Campion et al., 2010). Rosenberg et al. (2009) indicate that a reduction in MFIs' profit margin would not have the expected significant reduction on the charged interest rates, as an MFI could decrease its interest rate by only 17 per cent of its existing imposed interest rate. Meaning that even with zero profit margin required, most MFIs would still charge interest rates and might reduce their rates by only 0.17 per cent. Gaul (2011) indicated that MFIs in the MENA region are considered among the most profitable MFIs. Sanabel (2010) noticed that Egyptian MFIs' profitability has improved remarkably during the period from 2007 to 2009, with average return on assets of 7.5 per cent in 2009, compared with 4.9 per cent in 2007, which is higher than the 3.4 per cent regional average return on assets in 2009.

The regression analyses again support the hypothesis that, although net profit is one of the main determinants in portfolio yield structure, it is not the lead factor for NGO-MFIs' high interest rates, as for every 1 per cent increase in net profit margin, portfolio yield would increase by only 0.3 per cent and 0.06 per cent for first and second tier NGO-MFIs, respectively.

As the rate of nonperforming loans increases with its associated provisions, MFIs' profit margin would decline. Findings support the hypothesis that if impairment loan losses are high, an MFI might tend to impose higher rates on its clients to obtain the same expected profit margin.

On the other hand, the research results did not find strong evidence for the hypothesis that MFIs which have greater focus on serving more female clients tend to have higher interest rates and operational costs, as the findings suggest very weak statistically significant positive correlation between percentage of active female clients and both portfolio yield and operating expense ratio.

Many studies suggest that small loans are expected to carry higher interest rates and operational costs than larger ones, though, results from the regression analyses found no correlation between NGO-MFIs' average loan size and both portfolio yield and OER. In addition, while general concepts suggest that increasing outreach should allow MFIs to divide their fixed operating costs over more borrowers resulting in lower cost per loan, again, the regression analyses show very small or no statis-tically significant correlation between the number of active borrowers and both portfolio yield and OER for first and second tier NGO-MFIs. Similarly, results do not support the assumption that older MFIs should operate more efficiently than new ones, as the multiple and simple regression analyses found very slight impact for institutions' age on MFIs' efficiency.

Conclusion

Clearly, the road for providing reasonably priced credit for low-income Egyptians is a bumpy one, yet not impossible to ride. Although interest rates charged by Egyptian NGO-MFIs might seem quite similar to microcredit rates charged by MFIs all over the world, there is a clear potential for providing credit at lower prices, and much can still be done.

To start with, the expected availability of credit bureaux will open the gate for NGO-MFIs to greater operational efficiency. On the one hand, given the suggested correlation in our findings between impairment loan loss and both portfolio yield and operating expense ratio, access to credit bureaux will be very important for NGO-MFIs to improve their portfolio quality, in order to keep their operating expense at sustainable levels. In addition, as our results support the significant role of personnel and administrative expenses in both portfolio yield and operating expense ratio, credit bureaux will ease the borrower screening process and assist MFIs in collecting their loans, allowing a potential decrease in transportation costs and monitoring expenses. Loan collection is usually done by field officers who are entitled to visit their clients; sometimes even regular visits are required for effective monitoring of borrowers' businesses, an operation which costs MFIs both money and time.

Unfortunately, as the findings highlighted the significant correlation between MFIs' portfolio yield and cost of funds, high interest rates charged by commercial banks will remain a significant constraint for any potential expansion in the market. Therefore, while it is still difficult for NGOs-MFIs to acquire funds from commercial banks in the first place, and with the lack of any regulation allowing them to mobilize deposits, we can expect that subsidized loans from donor agencies will remain the most reliable source of funds, especially for small and medium NGO-MFIs.

The fear of allowing for-profit entities to provide financial services seems quite unreasonable, especially with such existing high profitability rates attained by most NGO-MFIs. High profitability rates recorded in this study and others, together with the lack of competition in the market, raise our attention again to the need for effective microfinance legislation. A trustworthy regulatory framework can boost competition and outreach by allowing other entities to provide microfinance services. In particular, the results support claims that, though microcredit providers are not-for-profit institutions, many large NGO-MFIs set high salaries for their board and top management compared with small NGO-MFIs. In other words, owners and members of not-for-profit organizations can and do benefit from the profitability of their institutions, without any reliable legal constraints. In addition, the noticeable low level of outreach strengthens the call for new interventions, as many Egyptian villages lack access to any formal credit services, or are served by monopolistic NGO-MFIs. Therefore, well-structured legislation, alongside a practical and reliable ceiling on interest rates may enhance the level of outreach in the market, and drive financial services providers to adopt more efficient and transparent practices, especially in undeveloped markets where low levels of competition and outreach are found. Nevertheless, we can expect that, with the existence of an efficient credit

bureau system, competition too may force MFIs to reduce their profits and improve their internal efficiency.

The need for new legislation addressing microcredit accounting standards is also vital for transparent auditing on portfolio quality indicators and transaction records. Meanwhile, personnel expenses, administrative costs, and profit margins reported will remain distorted.

Finally, many other factors that affect interest rates in Egypt are essentially macro-economic factors, including political and economic instability, high inflation rates, huge budget deficit (usually funded by T-Bills), weak physical infrastructure, weak business environment, and other factors. Considering the current low economic growth rates together with the absence of clear economic policy, something that hinders potential market growth, besides the existing inadequate road networks and transportation in slums and rural areas where targeted clientele are concen-trated, we can expect that any improvements at the macroeconomic level and in the physical infrastructure would promote more operational efficiency and help in reducing microcredit interest rates.

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